

What is claimed is:

1. A flat-type light-emitting device comprising:

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- 5 (a) an envelope having an inner space and an inner surface;  
the inner space being filled with a discharge medium;  
(b) a phosphor layer formed in the inner space of the envelope;  
(c) a first electrode formed on the inner surface of the envelope;

the first electrode including linear parts;

10 each of the linear parts having branches apart from each other at a first gap; and

- (d) a second electrode formed on the inner surface of the envelope adjacent to the first electrode;

the second electrode including linear parts;

15 each of the linear parts having branches apart from each other at a second gap;

wherein the linear parts of the first electrode and the linear parts of the second electrode are arranged alternately in the direction.

20 2. The device according to claim 1, wherein the discharge medium emits vacuum UV rays and the phosphor layer emits visible light due to the vacuum UV rays;

and wherein the envelope allows the visible light to

penetrate through the envelope to the outside.

112 { 3. The device according to claim 1, wherein the discharge medium emits vacuum UV rays and the phosphor layer emits near UV light  
5 due to the vacuum UV rays;

and wherein the envelope allows the near UV light to penetrate through the envelope to the outside.

4. The device according to claim 3, wherein the envelope allows the near UV light having a wavelength of 300 nm or greater to penetrate through the envelope to the outside at a transmittance of approximately 50 % or greater.

5. The device according to claim 1, further comprising a  
15 photocatalyst layer formed on an outer surface of the envelope.

6. The device according to claim 1, wherein the first gap and the second gap are equal to  $d$  (mm) that satisfies a relationship of  $0.5 \leq d \leq G/2$ , where  $G$  (mm) is a distance between the first inner  
20 surface of the envelope and the second inner surface thereof.

7. The device according to claim 1, wherein the first electrode has an outermost linear part that has no branch and the second electrode has an outermost linear part that has no branch.

8. The device according to claim 1, further comprising

a dielectric layer formed to cover the linear parts of the first electrode and the linear parts of the second electrodes; and

5 a protection layer formed on the dielectric layer.

9. The device according to claim 1, wherein one of the branches of each of the linear parts of the first electrode is apart from an adjoining one of the branches of each of the linear parts of

10 the second electrode at a dischargeable distance.

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